TOSHIBA Transistor Silicon NPN Triple Diffused Type

TTC5200

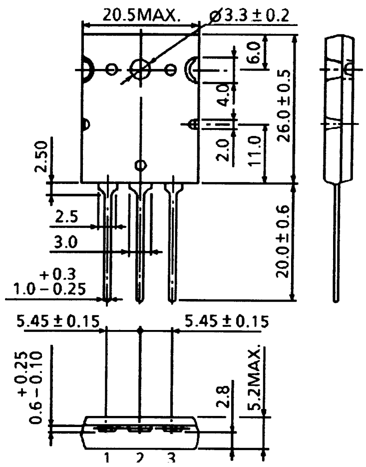
○ Power Amplifier Applications

- High collector voltage: V_{CEO} = 230 V (min)
- Complementary to TTA1943
- Recommended for 100-W high-fidelity audio frequency amplifier output stage.

Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	230	V
Collector-emitter voltage	V_{CEO}	230	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	15	A
Base current	I_B	1.5	A
Collector power dissipation (Tc=25°C)	P_C	150	W
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55 to 150	°C

Unit: mm



1.BASE
2.COLLECTOR(HEAT SINK)
3.EMITTER

JEDEC	—
JEITA	—
TOSHIBA	2-21F1A

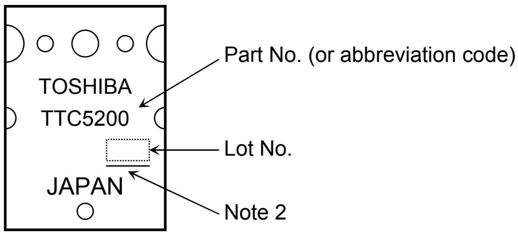
Weight: 9.75 g (typ)

Note 1 : Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = 230V, I_E = 0	—	—	5.0	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 5 V, I_C = 0	—	—	5.0	μA
Collector-emitter breakdown voltage	$V_{(BR)\ CEO}$	I_C = 50 mA, I_B = 0	230	—	—	V
DC current gain	$h_{FE\ (1)}$	V_{CE} = 5 V, I_C = 1 A	80	—	160	
	$h_{FE\ (2)}$	V_{CE} = 5 V, I_C = 7 A	35	—	—	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C = 8 A, I_B = 0.8 A	—	—	3.0	V
Base-emitter voltage	V_{BE}	V_{CE} = 5 V, I_C = 7 A	—	—	1.5	V
Transition frequency	f_T	V_{CE} = 5 V, I_C = 1 A	—	30	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz	—	145	—	pF

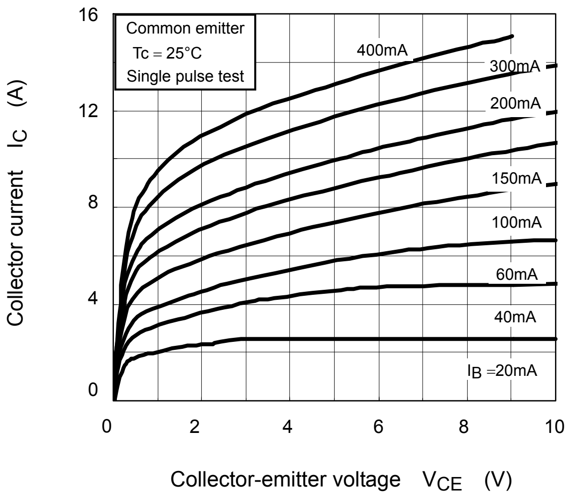
Marking



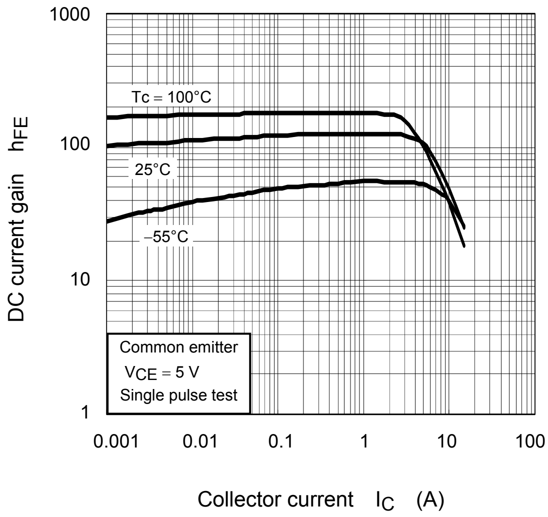
Note 2 : A line under a Lot No. identifies the indication of product Labels.
[[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product.
The RoHS is the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

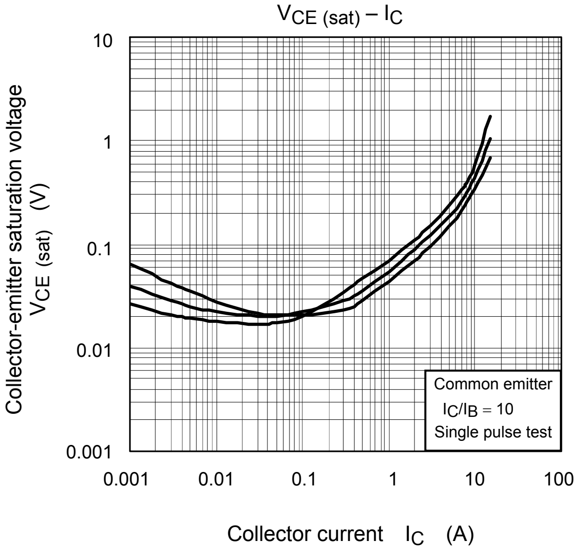
I_C – V_{CE}



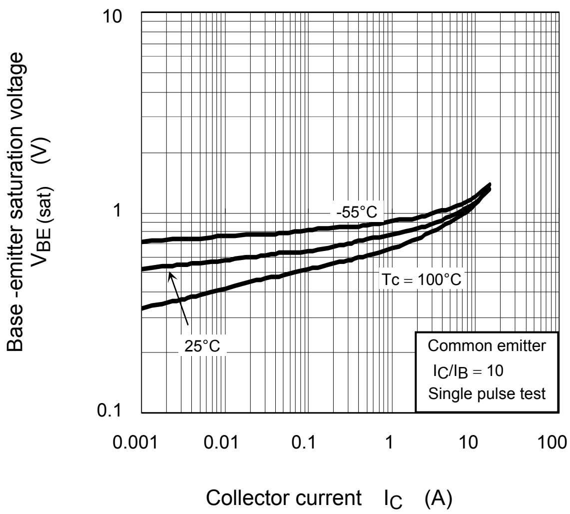
h_{FE} – I_C



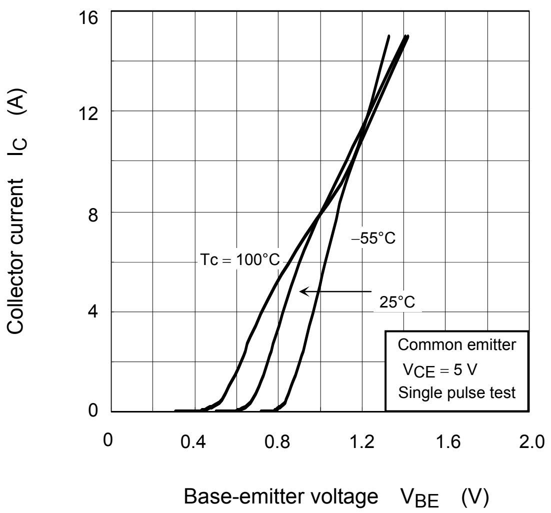
$V_{CE\ (sat)}$ – I_C



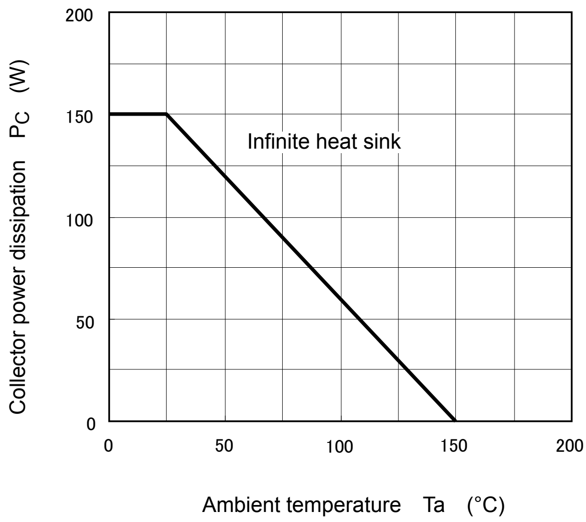
$V_{BE\ (sat)}$ – I_C

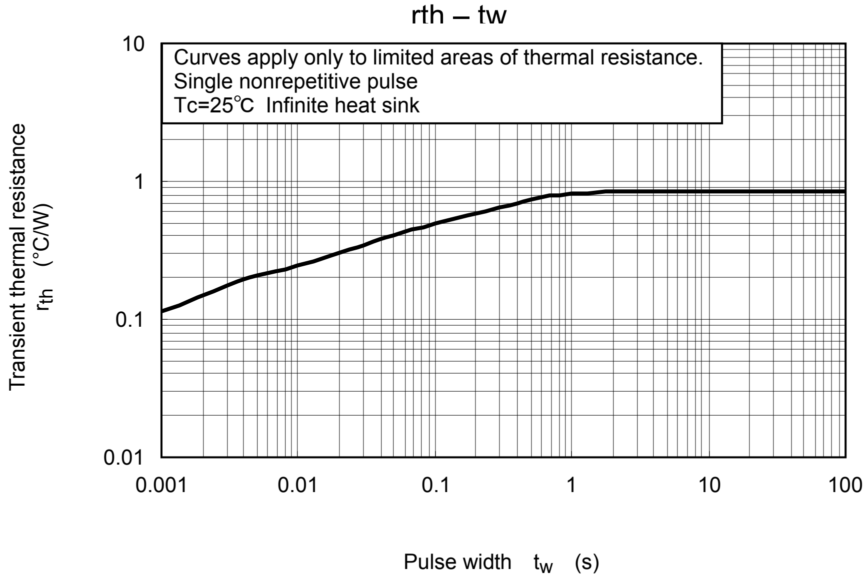


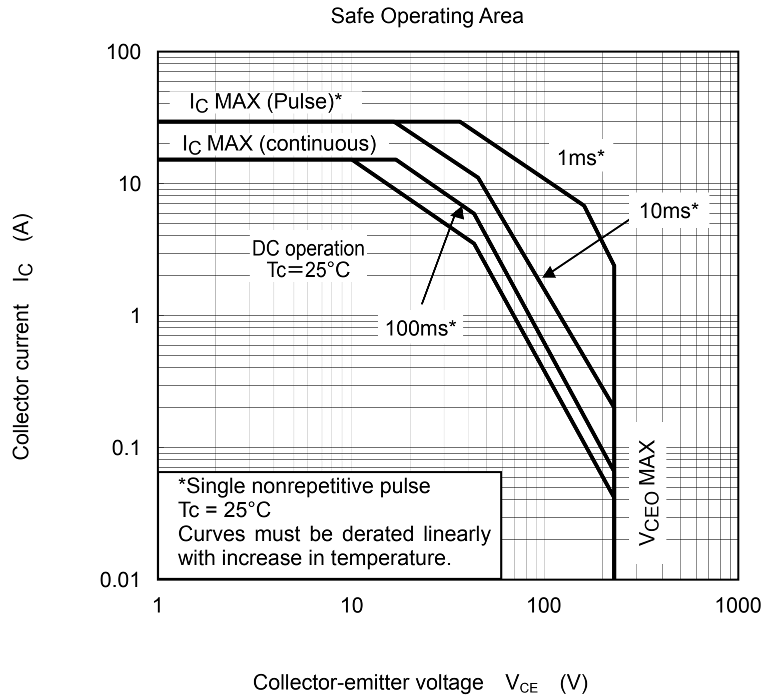
I_C – V_{BE}



P_C – Ta




rth – tw
Curves apply only to limited areas of thermal resistance.
Single nonrepetitive pulse
Tc=25°C Infinite heat sink
Transient thermal resistance
rth (°C/W)
10
1
0.1
0.01
0.001
0.01
0.1
1
10
100
Pulse width tw (s)


Safe Operating Area
IC MAX (Pulse)*
IC MAX (continuous)
1ms*
10ms*
DC operation
Tc=25°C
100ms*
VCEO MAX
*Single nonrepetitive pulse
Tc = 25°C
Curves must be derated linearly
with increase in temperature.
Collector current IC (A)
100
10
1
0.1
0.01
1
10
100
1000
Collector-emitter voltage VCE (V)

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